City of Shoreline

Annual Traffic Report

2014

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Introduction

This report provides an annual review and analysis of data collected by the City of Shoreline Traffic Services section. It summarizes collision, speed, and traffic volume data and highlights noteworthy trends. The data in this report guides the department in prioritizing Traffic Safety and Signal Rehabilitation resources, applying for grants to help finance capital improvement projects, and identifying target enforcement areas for the Shoreline Police Department.

This report strives to provide clear and usable traffic safety and operational information for reference by staff, Council and the citizens of Shoreline.

To request additional information, please contact the Public Works Department, Traffic Services section or visit the Traffic Services webpage at http://shorelinewa.gov/government/departments/public-works/traffic-services.

Executive Summary

Pedestrian and bicycle, injury, and total collisions within the City of Shoreline are up this year in comparison to 2013 data. This highlights the need for continued engineering, education, and enforcement efforts to improve roadway safety.

The number of total and injury collisions related to distracted and inattentive driving has risen sharply over the past 3 years. In addition, injury collisions related to speed are also on the rise. Over the last year, Shoreline Police have effectively targeted speeding locations identified by Traffic Services and in comparison to 2013, targeted streets show a marked improvement. Traffic Services and Shoreline Police will continue to work together in an effort to reduce injury collisions related to speed. Additional enforcement is also recommended for cell phone use while driving in order to bring the number of injury collisions down.

Pedestrian and bicycle collisions hit an all-time high in 2014 which may be in part due to shifting modes of transportation. Transit ridership has increased significantly over the past year which would account for more walking trips. Still, this increase is notable and warrants additional analysis so this year's report includes a list of recommendations for locations with three (3) or more pedestrian and/or bicycle collisions over a five year period.

This year's analysis of High Collision Locations and associated recommendations are prioritized by total number of collisions. Previous reports were prioritized based on collision rate, however focusing on locations with the highest numbers provides the best opportunity for mitigating the most collisions. Collision rate is still provided for context.

Traffic volumes are down from 2013, possibly due to shifting modes of transportation, however when compared to the five year average, Average Weekday Daily Traffic is up slightly by .47%.

Data Sources

This report summarizes collision data trends based on data from 2008 through 2014, with emphasis on data collected from 2012 through 2014. Only collisions that occurred on City streets and are investigated by police officers are included in this report. Excluded are collisions on private property, locations outside of City Right of Way, such as on State Routes (i.e. N 145th Street), Limited Access locations (i.e. I-5 interchanges), phone reports, non-police investigated incidents, collisions under the threshold of $700, and other non-collision vehicle incident reports.

Collision data is obtained from Shoreline Police Department reports and is merged with data from the Washington State Department of Transportation (WSDOT). Data from WSDOT includes collisions investigated by other agencies such as Washington State Patrol. No citizen reports are included as WSDOT no longer provides this data to local jurisdictions as of January 1, 2009. The data contained in this report is based on reportable collisions only, as defined in the following section.

Traffic volume and speed data presented in this report was collected and analyzed by Shoreline Traffic Services staff.

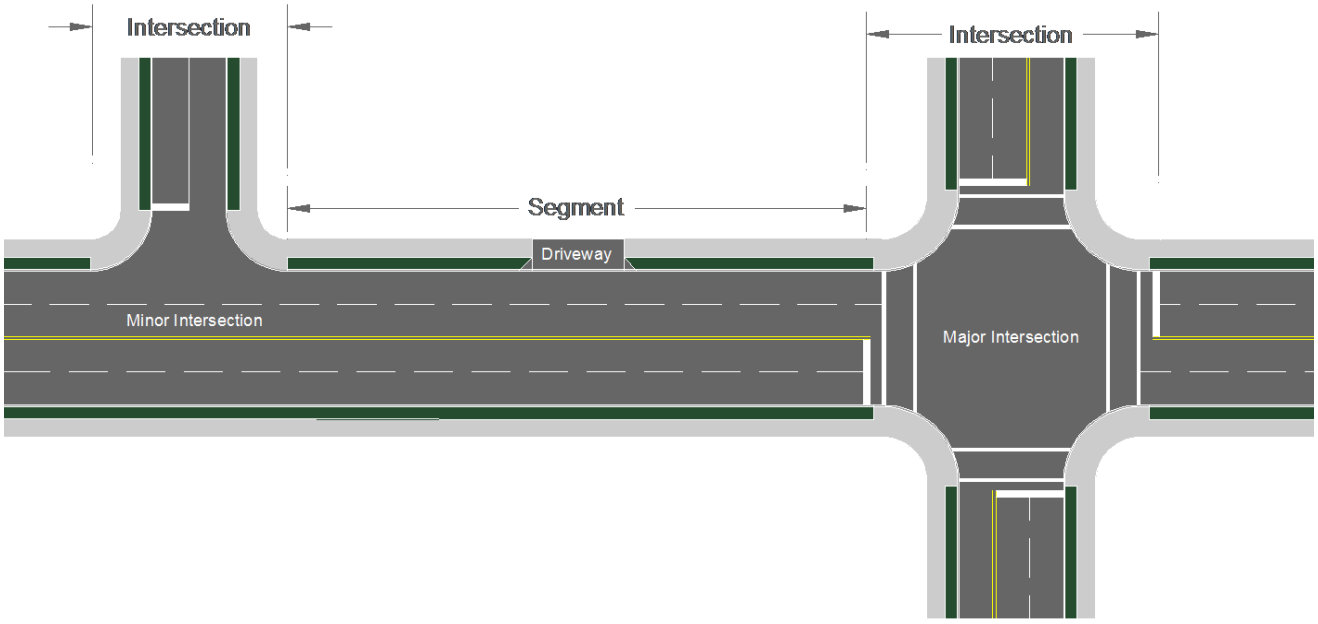
Transit data was provided by King County Metro.

Definitions

Reportable Collision	A collision which involves death, injury, or property damage in excess of $700.00 to the property of any one person.
All Collisions	The total number of reportable motor vehicle collisions including fatal, injury or property damage.
Fatal Collision	Motor vehicle collision that results in fatal injuries to one or more persons.
Injury Collision	Motor vehicle collision that results in injuries, other than fatal, to one or more persons. This includes possible injury, minor injury, evident injury, and serious injury collisions.
Property Damage Only Collision (PDO)	Motor vehicle collision in which there is no injury to any person, but only damage to a motor vehicle, or to other property, including injury to domestic animals.
Did Not Grant Right of Way	A contributing circumstance type indicating that the driver failed to properly yield Right of Way; for example, a driver hitting a pedestrian in a crosswalk when the walk signal is on for the pedestrian movement.
Transit Signal Priority	A strategy to improve transit travel times which involves coordinated efforts

	between transit vehicle detection systems, traffic signal control systems, and communication technologies.
High Collision Location	Locations with the highest number of reported collisions.
Collision Rate	For intersections, the number of collisions at an intersection divided by the average annual volume of vehicles entering the intersection. The resulting unit is collisions per million entering vehicles. For segments, the number of collisions along the segment divided by the length of the segment and the average annual volume of vehicles along the segment. The resulting unit is collisions per million vehicle miles.
85th Percentile Speed	The speed at which 85% of traffic is traveling at; a common traffic engineering standard for measuring and evaluating traffic speeds.

For High Collision Location analysis, intersections and segments are categorized as shown below.

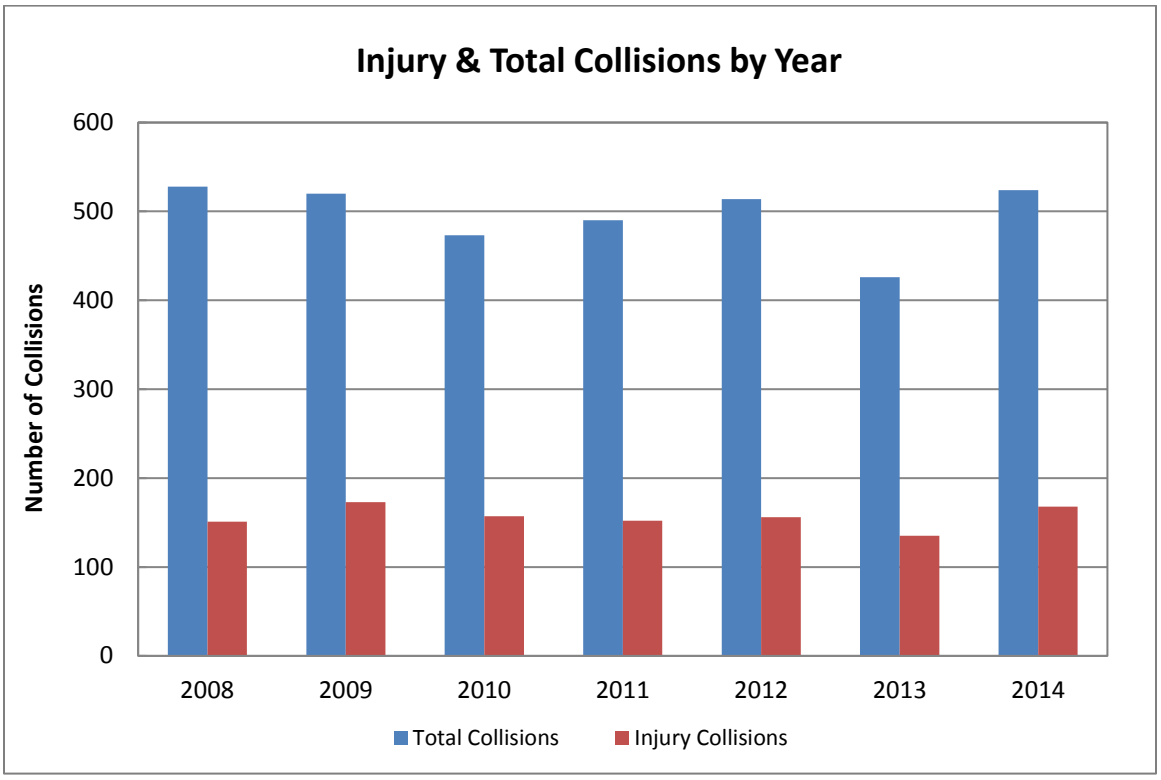


Collision Summary

There were 524 collisions reported on City of Shoreline streets in 2014. Below is a summary of collisions from 2008 through 2014.

2008-2014 Total Collisions							
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
Injury	151	172	155	151	155	134	167
Property Damage	340	321	292	306	318	265	322
Fatal	0	1	2	1	1	1	1
Unknown	37	26	24	32	40	26	34
Total	528	520	473	490	514	426	524

Although the number of collisions continues to trend slightly downward, the number of collisions in 2014 is up from 2013. Injury collisions have continued to stay at an approximately level condition since 2008, however there has been an increase in comparison to 2013 data.



Societal Costs

Traffic collisions have considerable impact not only on the people directly involved in the collision but also on the community as a whole. Below is the National Safety Council's most recent (year 2011) analysis of motor vehicle collision costs in the United States. The information provided includes estimates for the average economic cost per death, per injury, and per property damage collision. The economic cost estimates are a measure of the productivity lost and expenses incurred because of the collision; they do not reflect what society is willing to pay to prevent a statistical fatality or injury.

Motor vehicle collision per each death, injury and property damage:

- Death $1,420,000
- Disabling Injury $78,700
- Incapacitating Injury $70,500
- Non-Incapacitating evident Injury $22,700
- Possible Injury. $12,800
- Property Damage Collision (including non-disabling injuries) $9,100

Source: National Safety Council® Research & Statistics http://www.nsc.org
update December, 2011.

Below is a summary of societal costs for collisions in Shoreline from 2012 through 2014.

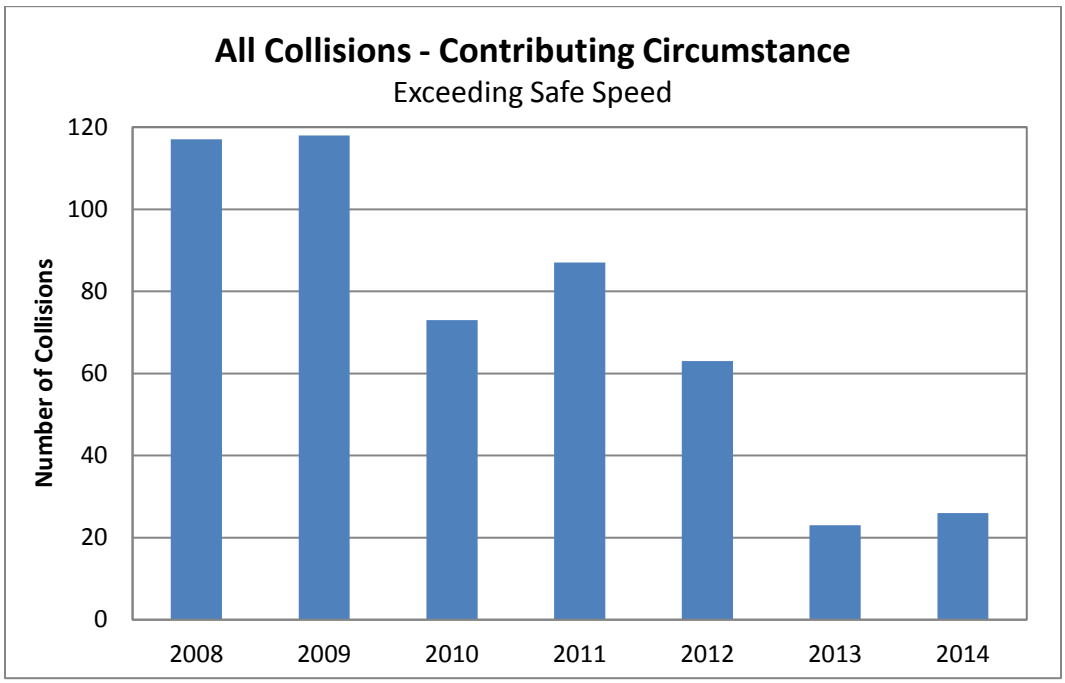
2012-2014 Collision Societal Costs				
Type of Collision	**2012**	**2013**	**2014**	**3-Year Total**
Injury	$7,157,125	$6,187,450	$7,711,225	$21,055,800
Property Damage	$2,893,800	$2,411,500	$2,930,200	$8,235,500
Fatal	$1,420,000	$1,420,000	$1,420,000	$4,260,000
Total	$11,470,925	$10,018,950	$12,061,425	$33,551,300

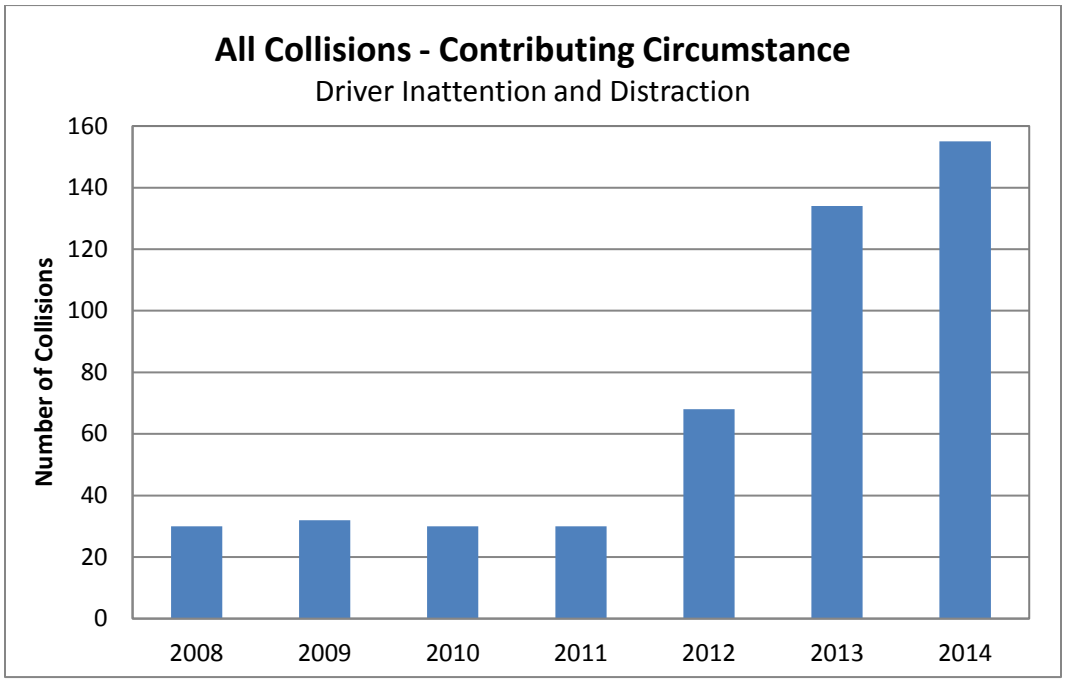
Contributing Circumstances

The top three contributing circumstances for collisions continue to be "Did Not Grant Right of Way", "Exceeding Safe Speed", and "Driver Distraction and Inattention". Data from 2014 alone shows a similar distribution to the table below.

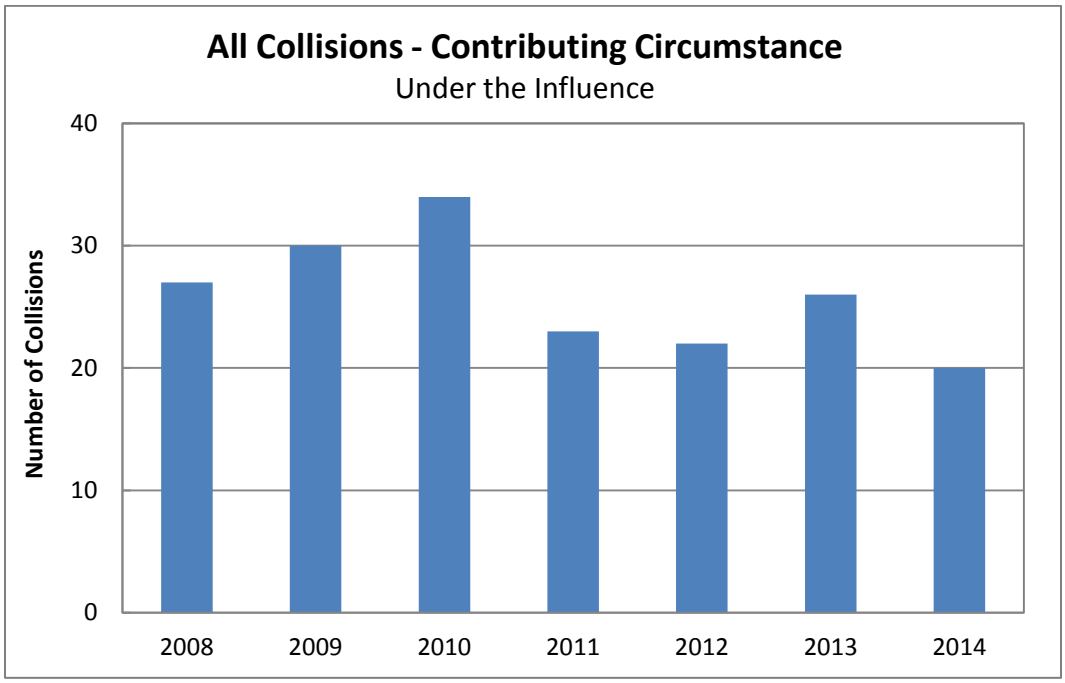
Contributing Circumstance	2008 - 2014
Did Not Grant Right of Way	24%
Exceeding Safe Speed	15%
Driver Distraction & Inattention	14%

Two significant trends can be seen in the following graphs. Since 2008, there has been a dramatic decrease in the number of collisions with "Exceeding Safe Speed" listed as a contributing circumstance. In sharp contrast, the number of collisions attributed to "Driver Distraction and Inattention" has risen inversely.



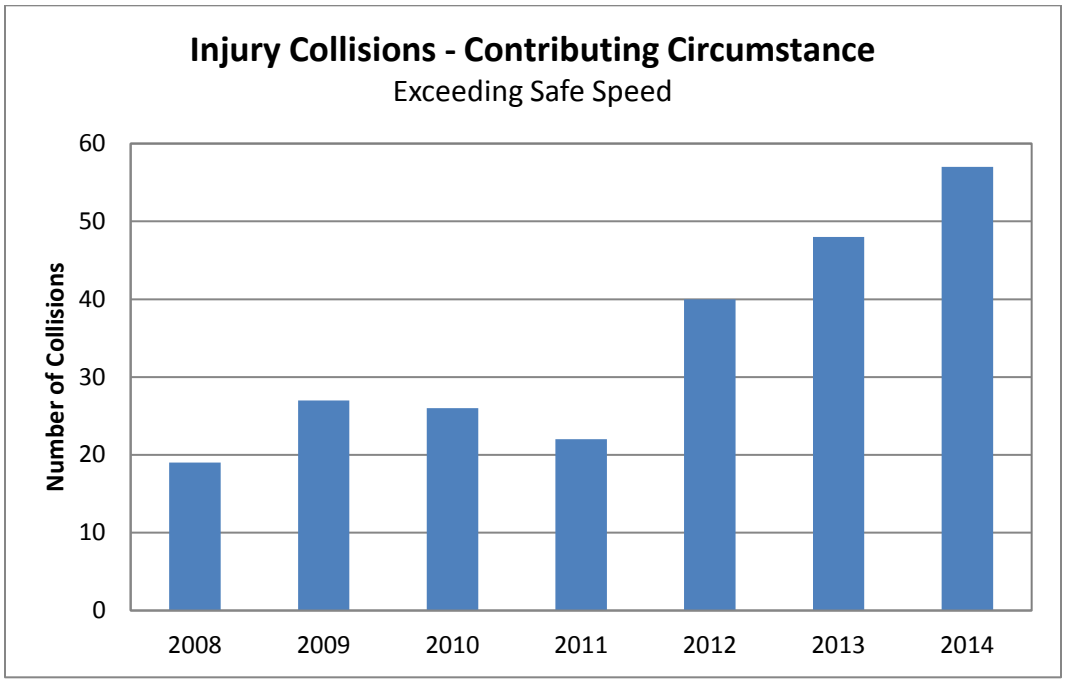


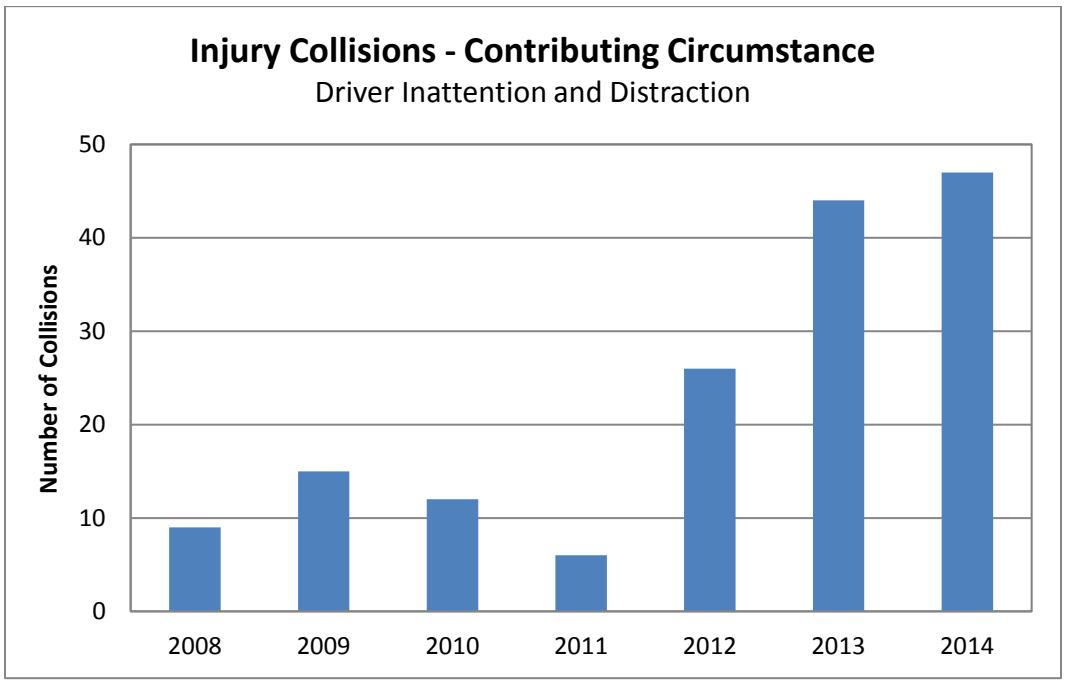
Impaired driving represents approximately 5% of all collisions, similar to the statewide trend. Collisions in Shoreline related to impaired driving are at an all time low in 2014.



Injury Collisions

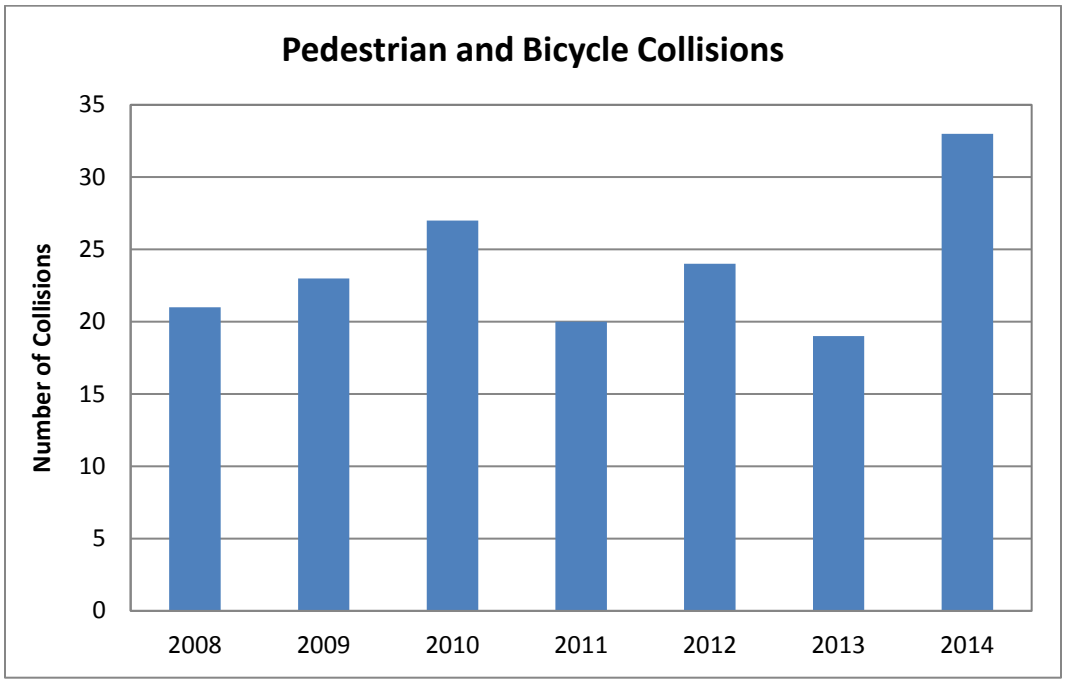
The total number of speed related collisions is decreasing, however it is important to note that the number of injury collisions related to speed are on the rise. Similarly the number of injury collisions attributed to distracted and inattentive driving are also on the rise. See the following graphs for injury collision data related to speed and inattention.





Pedestrian and Bicycle Collisions

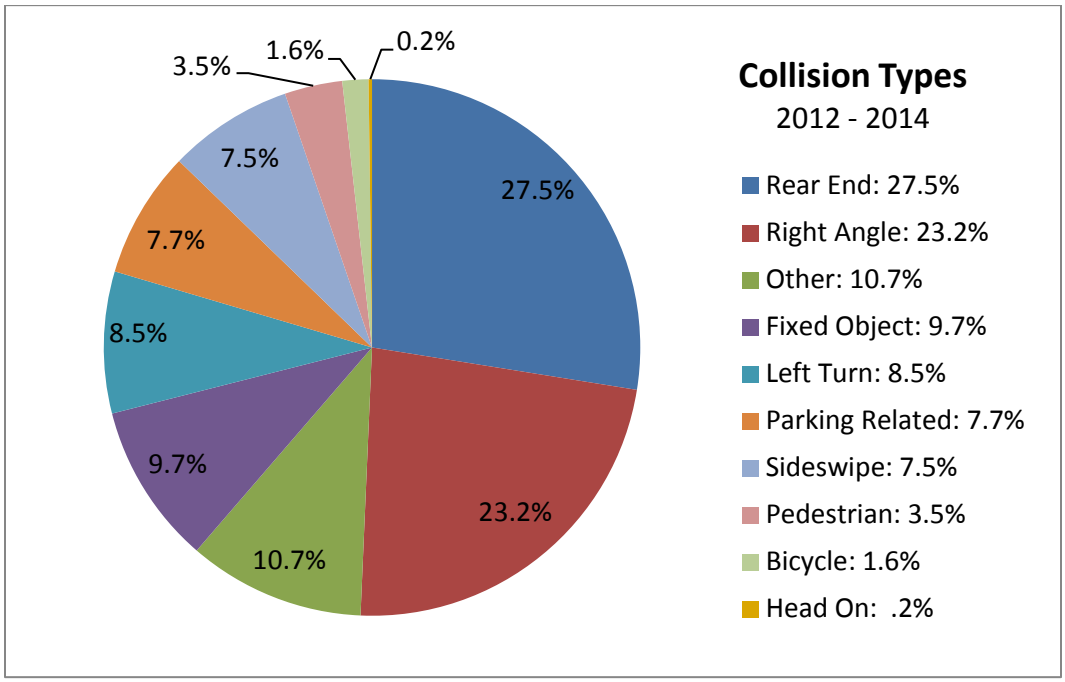
Since 2008, the rate of pedestrian and bicycle collisions has stayed relatively level. However in 2014, there has been a significant increase overall and in comparison to 2013 numbers. This may be, in part, due to more people walking and biking. Transit ridership is also on the rise which would account for increased pedestrian activity. For information regarding pedestrian and bicycle collision locations, see the High Collision Locations section. The primary contributing circumstance listed for pedestrian and bicycle collisions is "Did Not Grant Right of Way".



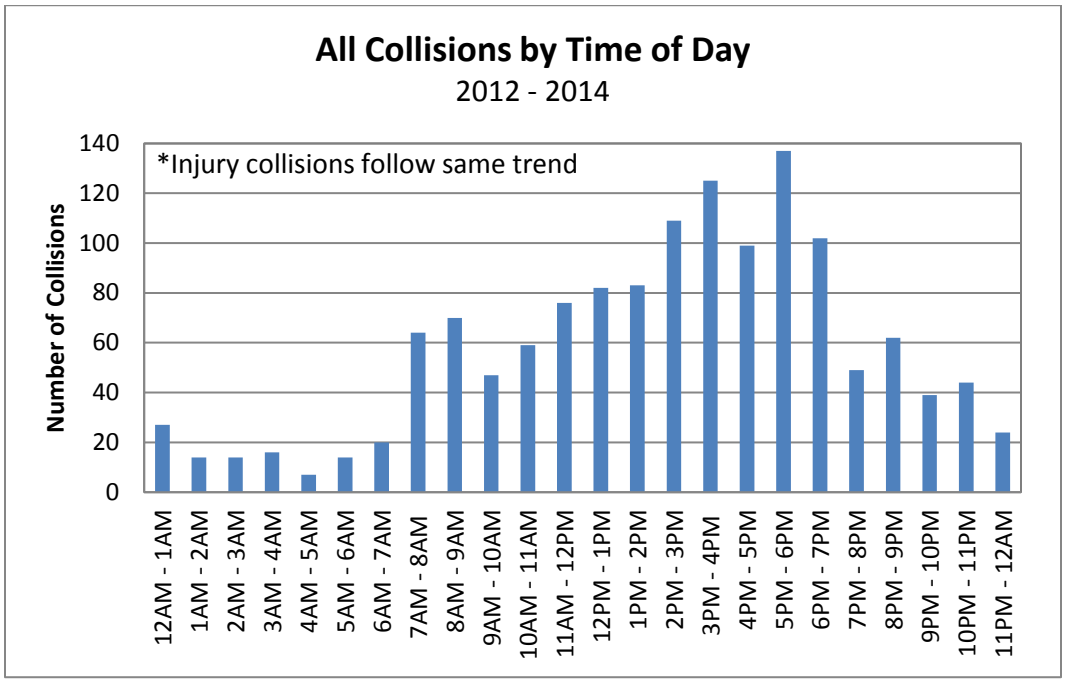
Year	Pedestrian Collisions	Bicycle Collisions
2008	17	4
2009	18	5
2010	18	9
2011	14	6
2012	16	8
2013	12	7
2014	24	9

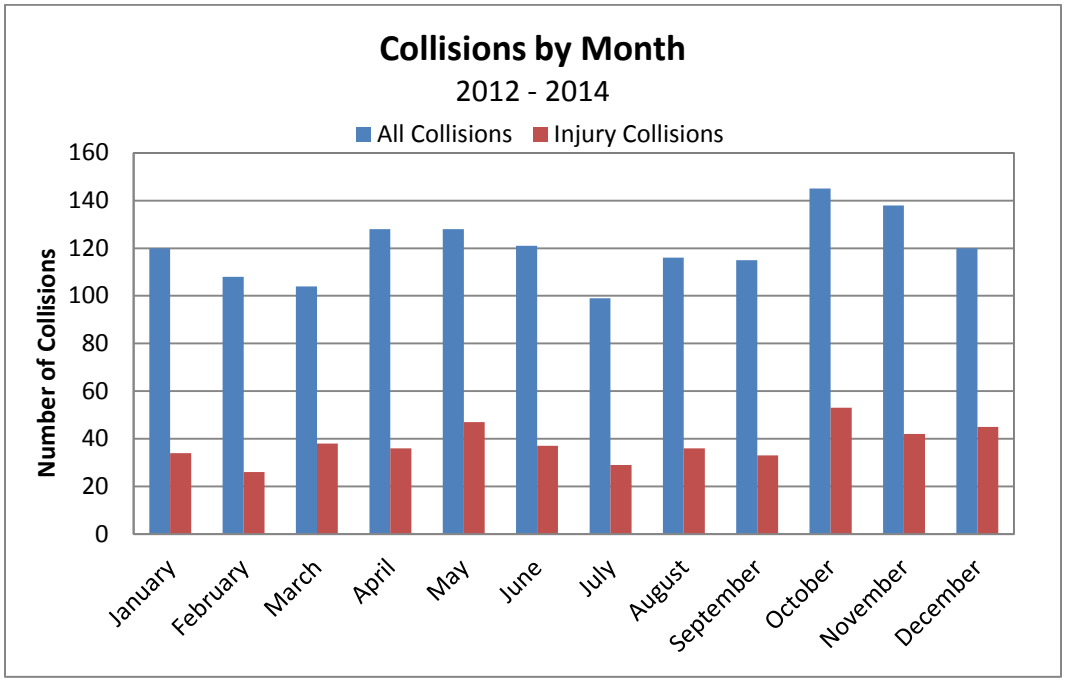
Other Collision Statistics

As shown in the following chart, “Rear End” and “Right Angle” collisions make up the majority of collision types. Approximately 17% of all collisions were listed as “Hit and Run”.

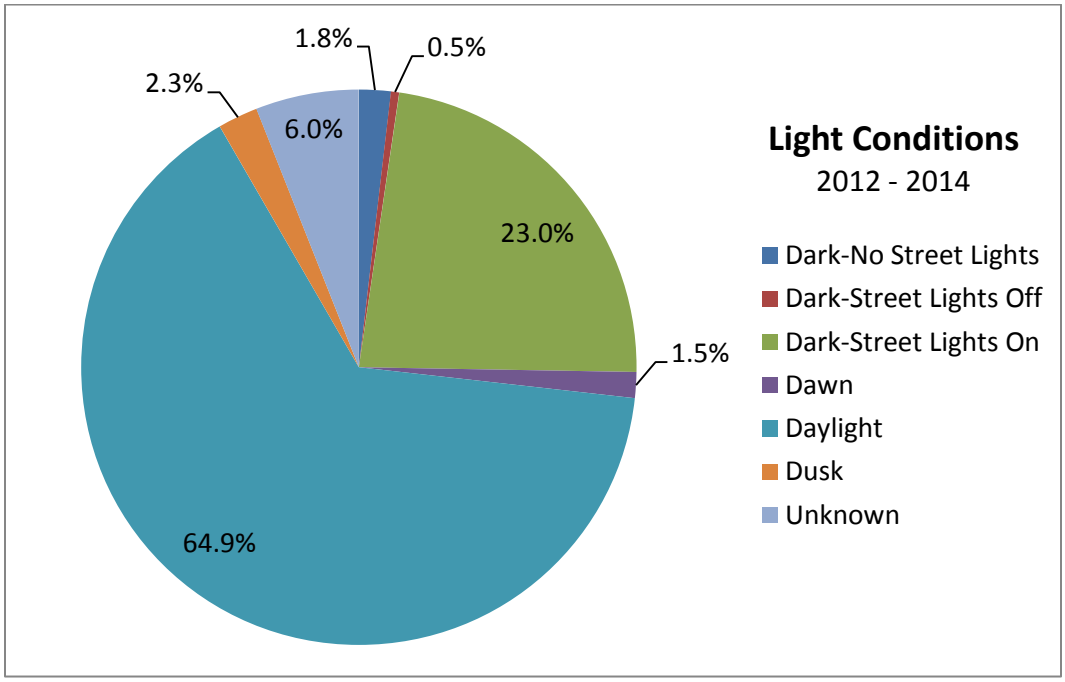


Collisions in Shoreline most often occur between the hours of 5 and 6 PM. This is in line with the statewide trend. October and November are the months with the highest numbers of collisions.

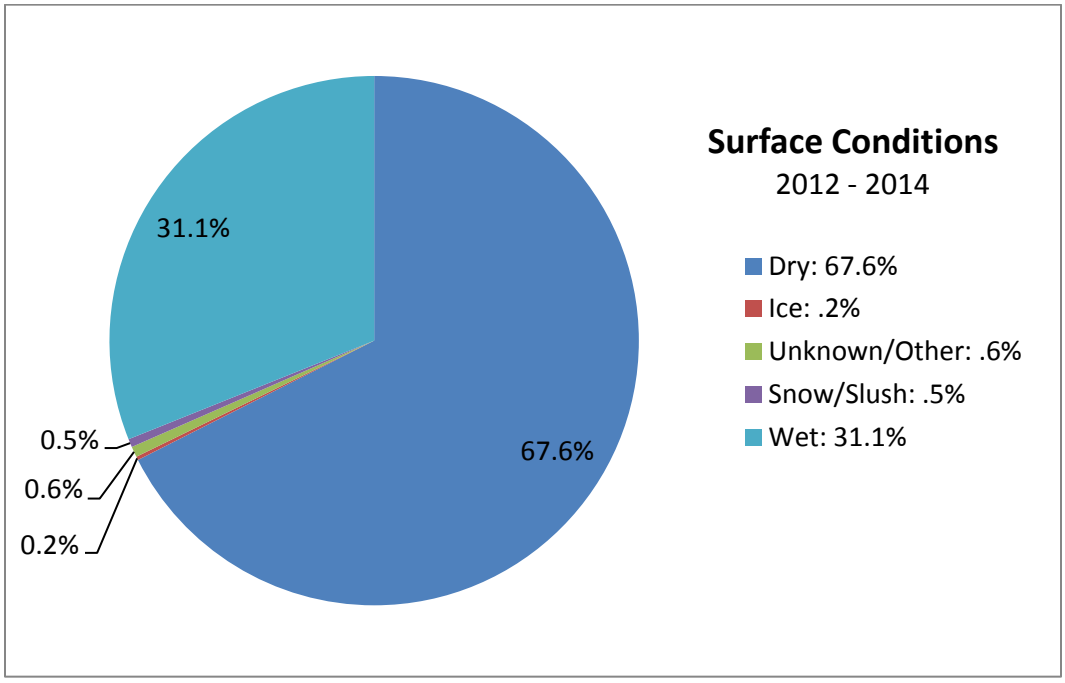




Most collisions occur during daylight hours, with "Dark – Street Lights On" representing the next highest category.



Nearly 68% of collisions occur on dry pavement, similar to the statewide average of 69%.



High Collision Locations

The top 25 High Collision Locations are identified by reviewing three years of collision data, separating locations into Intersections or Segments in order to better target mitigation strategies. The High Collision Locations tables list locations within the City with the highest number of reported collisions in descending order. Also included is the collision rate associated with the location in order to provide context; while a high number of collisions may seem alarming, when traffic volumes and segment lengths are taken into account, the rate may be more reflective of the overall risk associated with a location. Number of injuries at the location is also included for reference. This year, a review of pedestrian and bicycle locations over a five year period is also included.

There is no industry standard as to what number of collisions or collision rate is considered "high." In King County, among similar sized cities (with population of 30 - 60k), Shoreline's collision per capita rate ranks 3rd lowest out of 7. Nationally, locations with 5 or more correctable collisions in a 12 month period may be considered for some additional traffic control devices, such as stop signs and traffic signal revisions.

The following tables provide information regarding High Collision Locations based on intersection, street segment, or whether pedestrian/bicycle related. The top 25 High Collision Location intersections, sorted by number of collisions, are presented in the table below. Collision rates at locations with 5 collisions were evaluated to determine the last two positions in the table.

2012 - 2014 High Collision Location Intersections				
Location	**Signalized**	**Number of Collisions**	**Number of Injuries**	**Collision Rate**
3rd Ave NW & NW Richmond Beach Rd	yes	17	7	0.75
Aurora Ave N & N 200th St	yes	14	4	0.32
19th Ave NE & Ballinger Way NE	yes	13	4	0.45
Aurora Ave N & N 163rd St	no	12	3	0.28
Aurora Ave N & N 175th St	yes	11	3	0.19
5th Ave NE & NE 175th St	yes	10	5	0.41
Ashworth Ave N & N 192nd St	no	9	2	1.84
Linden Ave N & N 185th St	yes	9	6	0.52
15th Ave NE & NE 175th St	yes	8	1	0.30
Aurora Ave N & N 185th St	yes	8	2	0.16
Aurora Ave N & N 155th St	yes	8	3	0.14
Fremont Ave N & N 185th St	yes	8	3	0.34
Meridian Ave N & N 155th St	yes	8	2	0.43
Meridian Ave N & N 185th St	yes	8	3	0.33
15th Ave NE & Ballinger Way NE	yes	7	1	0.17
15th Ave NE & NE 155th St	yes	7	4	0.31
19th Ave NE & NE 205th St	yes	7	3	0.41
Meridian Ave N & N 200th St	yes	7	3	0.49
10th Ave NE & NE 175th St	yes	6	4	0.33
15th Ave NE & NE 180th St	yes	6	5	0.31
5th Ave NE & NE 155th St	yes	6	4	0.35
8th Ave NE & NE 175th St	no	6	3	0.30
Meridian Ave N & N 175th St	yes	6	1	0.15
Aurora Ave N & N 160th St	yes	5	0	0.11
Aurora Ave N & N 205th St	yes	5	0	0.10

The following table represents the top 25 High Collision Location segments sorted by number of collisions. Collision rates at locations with eight (8) collisions were evaluated to determine the last three positions on the table.

2012 – 2014 High Collision Location Segments			
Location	**Number of Collisions**	**Number of Injuries**	**Collision Rate**
Ballinger Way NE From 19th Ave NE to NE 205th St	40	19	5.71
Aurora Ave N From N 160th St to N 163rd St	24	7	5.24
Aurora Ave N From N 199th St to N 200th St	24	7	11.02
Aurora Ave N From N 152nd St to N 155th St	22	7	3.35
Aurora Ave N From N 200th St to N 205th St	19	4	2.29
Aurora Ave N From N 149th St to N 152nd St	18	4	3.16
Aurora Ave N From N 170th St to Ronald Pl N	18	5	2.71
Aurora Ave N From N 175th St to Ronald Pl N	16	4	1.76
Aurora Ave N From Ronald Pl N to N 175th St	16	6	4.65
N 175th St From Meridian Ave N to Corliss Ave N	15	4	2.72
Aurora Ave N From N 185th St to N 192nd St	13	4	2.81
Aurora Ave N From N 195th St to Firlands Way N	13	5	8.35
Aurora Ave N From N 145th St to N 149th St	12	1	1.67
Aurora Ave N From N 155th St to Westminster Way N	12	5	1.72
Aurora Ave N From N 184th St to N 185th St	12	3	8.58
NW Richmond Beach Rd From 3rd Ave NW to 8th Ave NW	12	2	2.91
15th Ave NE From Forest Park Dr NE to NE 205th St	11	3	4.97
Aurora Ave N From N 163rd St to N 165th St	11	5	2.39
N 155th St From Aurora Ave N to Midvale Ave N	11	3	11.97
Aurora Ave N From Westminster Way N to N 160th St	10	6	16.76
15th Ave NE From NE 175th St to NE 177th St	9	4	4.33
N 175th St From Midvale Ave N to Ashworth Ave N	9	2	2.20
15th Ave NE From NE 169th St to NE 170th St	8	4	7.75
N 175th St from Corliss Ave N to 175th St Ramp SB	8	0	4.63
N 185th St from Linden Ave N to Aurora Ave N	8	3	4.27

Below is a table which presents locations with three (3) or more pedestrian or bicycle collisions in the last five years (2010 – 2014).

2010 – 2014 High Pedestrian and Bicycle Collision Locations		
Location	**Signal**	**Number of Pedestrian and Bicycle Collisions**
Ballinger Way NE From 19th Ave NE To NE 205th St	no	4
15th Ave NE & NE 168th St	no	3
3rd Ave NW & NW Richmond Beach Rd	yes	3
Aurora Ave N From N 170th St to Ronald Pl N	no	3
Aurora Ave N From Ronald Pl N to N 182nd St	no	3
Linden Ave N & N 185th St	yes	3
Meridian Ave N & N 200th St	yes	3

Collision Reduction Strategies

The City of Shoreline strives to reduce overall, injury, and fatality collisions on its roadways consistent with the Washington State Strategic Highway Safety Plan's Target Zero Initiative. The goal of this initiative is to achieve zero deaths and serious injury collisions by 2030.

Shoreline engages in the 'Three E's' in working toward this goal. They are:

Education — Gives drivers, pedestrians, and bicyclists information about how to make safer choices. Examples of this include Shoreline's Neighborhood Traffic Safety and Action Plans, outreach to residents that provides information about the dangers speeding and collisions and encourages safer travel, utilizing radar speed carts to remind drivers of their speed, web-based information, and working with schools on Safe Routes to School plans.

Enforcement — Utilizes the Shoreline Police Department Traffic Division to focus enforcement efforts on problem areas to increase community awareness and compliance. Emphasis patrols can target specific violations such as speeding, failure to yield to pedestrians, cell phone use while driving, and disobeying traffic control devices.

Engineering — Implements best engineering practices to prevent or reduce the severity of collisions. This includes operational evaluation of facilities (including signals, signs, striping and guardrail, etc.), designing capital improvements with safety as a guiding factor, installing traffic calming devices (such speed humps, chicanes, or traffic circles, etc), and providing routine maintenance of traffic assets.

Roadway users can make Shoreline roads safer too:

- Get educated on the rules of the road.
- Obey the law.
- Share the road with bicyclists.
- When biking and walking, wear reflective bright clothing to increase visibility.
- Stop, look, listen before crossing the street.
- Be alert.
- Don't be a distracted driver and never text and drive.
- Never drive while under the influence of alcohol and/or drugs.
- Be courteous and patient.

Recommendations

Police and Public Works staff work together to review the top 10 High Collision Locations. Focusing on the top 10 locations facilitates strategic and systematic prioritization of limited City resources. This year, the top 10 locations were prioritized based on number of collisions in order to maximize the benefit of recommendations and improvements, working toward the goal of decreasing the overall number of collisions.

Using the Three E's, discussed in the previous section, recommendations were developed to address identified collision patterns. Staff also considered longer-term strategies to address identified issues.

The top 10 intersection locations and associated recommendations are shown below. For locations with eight (8) collisions, collision rate was evaluated to populate the 9th and 10th rankings on the list.

Top 10 Intersection Locations and Associated Recommendations				
Location	**Number of Collisions**	**Number of Injuries**	**Collision Rate**	**Recommendation**
3rd Ave NW & NW Richmond Beach Rd	17	7	0.75	Work order was issued to revise the signal to "split phase" operation. Split phasing will negatively impact signal efficiency and drivers will experience more delay. This work will be completed in 2015. Further improvements, including left turn lanes, should be considered as part of the TIP/CIP.
Aurora Ave N & N 200th St	14	4	0.32	Intersection is being rebuilt as part of the Aurora 3B project.
19th Ave NE & Ballinger Way NE	13	4	0.45	Revise Intersection phasing, including adding a flashing yellow arrow.

Aurora Ave N & N 163rd St	12	3	0.28	Evaluate sight distance and traffic control devices.
Aurora Ave N & N 175th St	11	3	0.19	Evaluate signal timing.
5th Ave NE & NE 175th St	10	5	0.41	Intersection phase changes were completed in mid 2014 – protected/permissive phasing was added to northbound and southbound movements which should address collisions.
Ashworth Ave N & N 192nd St	9	2	1.84	Evaluate for all way stop control (currently 2-way stop controlled).
Linden Ave N & N 185th St	9	6	0.52	Phase changes recommended however major signal rehabilitation work is needed. Scope feasibility for incorporating as a 2015 Signal Rehabilitation project or for future CIP project.
Meridian Ave N & N 155th St	8	2	0.43	Signal will be rebuilt as part of a grant obtained in 2014. New phasing will address collision problem.
Meridian Ave N & N 185th St	8	3	0.33	Short term – identify for possible signal phase changes to incorporate flashing yellow arrow if major rehabilitation work is not required. Long term - Intersection identified as a future Growth Project.

The top ten segment locations and associated recommendations are shown below.

Top 10 Segment Locations and Associated Recommendations				
Location	**Number of Collisions**	**Number of Injuries**	**Collision Rate**	**Recommendation**
Ballinger Way NE From 19th Ave NE to NE 205th St	40	19	5.71	Evaluate spot access control improvements. This should be evaluated as a CIP project to allow for significant modifications for access control which will require considerable coordination efforts with businesses and property owners.

Aurora Ave N From N 160th St to N 163rd St	24	7	5.24	Evaluate sight distance and traffic control (also included in intersection)
Aurora Ave N From N 199th St to N 200th St	24	7	11.02	Roadway segment is being reconstructed as part of the Aurora 3B project.
Aurora Ave N From N 152nd St to N 155th St	22	7	3.35	Primarily rear end collisions. Signal timing was revised in 2014 and will be reevaluated upon substantial completion of Aurora 3B.
Aurora Ave N From N 200th St to N 205th St	19	4	2.29	Roadway segment is being reconstructed as part of the Aurora 3B project.
Aurora Ave N From N 149th St to N 152nd St	18	4	3.16	Primarily rear end collisions. Signal timing was revised in 2014 and will be reevaluated upon substantial completion of Aurora 3B.
Aurora Ave N From N 170th St to Ronald Pl N	18	5	2.71	Primarily rear end collisions. Signal timing was revised in 2014 and will be reevaluated upon substantial completion of Aurora 3B.
Aurora Ave N From N 175th St to Ronald Pl N	16	4	1.76	Primarily rear end collisions. Signal timing was revised in 2014 and will be reevaluated upon substantial completion of Aurora 3B.
Aurora Ave N From Ronald Pl N to N 175th St	16	6	4.65	Primarily rear end collisions. Signal timing was revised in 2014 and will be reevaluated upon substantial completion of Aurora 3B.
N 175th St From Meridian Ave N to Corliss Ave N	15	4	2.72	Primarily rear end collisions. Signal timing was revised in 2014. Will continue to monitor.

The table below shows locations with 3 or more pedestrian collisions in a five year period and associated recommendations.

Locations with 3 or more Pedestrian Collisions in a Five Year Period and Associated Recommendations		
Location	**Pedestrian & Bicycle Collisions**	**Recommendations**
Ballinger Way NE From 19th Ave NE To NE 205th St	4	Access control (as described in segments section) could provide safer alternatives for mid-block crossings.
15th Ave NE & NE 168th St	3	Evaluate for improved pedestrian and bicycle traffic control devices.
3rd Ave NW & NW Richmond Beach Rd	3	Signal phase changes will improve pedestrian safety at this intersection.
Aurora Ave N From N 170th St to Ronald Pl N	3	Possible jaywalking emphasis patrol.
Aurora Ave N From Ronald Pl N to N 182nd St	3	Possible jaywalking emphasis patrol.
Linden Ave N & N 185th St	3	Countdown pedestrian heads and accessible pushbuttons were not completed last year since major signal rehabilitation work is needed in order to install them. Scope feasibility for incorporating as a 2015 Signal Rehabilitation project or future CIP project.
Meridian Ave N & N 200th St	3	Install “turn must yield to pedestrians” sign.

In addition to High Collision Locations, there were some notable trends in collision contributing circumstance. It is recommended that Police Enforcement continue to target speeding as well as increase enforcement of cell phones use while driving. It is important to note that focused enforcement often results in opportunities to educate drivers of their behavior rather than simply issuing citations.

The Police Department and Traffic Services will continue to meet quarterly to review speed differential and collision data to identify additional opportunities.

The Neighborhood Traffic Action Plans (NTAP) and Neighborhood Traffic Safety Program (NTSP) managed through Traffic Services will continue to utilize education to support neighborhood traffic safety concerns. Police will also continue to provide education outreach efforts through the following types of activities:

- Safe driving presentations to at-risk drivers ages 16-19 years old. The Shoreline Police School Resource Officer and Traffic Unit work jointly to support this effort.
- Safe driving and traffic complaint reporting presentations at neighborhood meetings. These are conducted through joint efforts between the Shoreline Police Community Outreach Officer and Traffic Unit.

Implemented Recommendations (2013)

- Signal timing at all 45 signals throughout the City was updated in 2014. Most notably, pedestrian walk times were revised to improve safety and meet industry standards. Red and yellow clearance intervals were adjusted as needed. Signal coordination along Aurora Ave N was also implemented.

- Working with the Shoreline School District, Safe Routes to School Maps were updated for all elementary schools.

- The majority of Shoreline's Street Lights have now been converted to brighter LED fixtures.

- At 25th Ave NE and NE 155th Street, sight distance was reviewed and parking restrictions were expanded to improve sight lines.

- At 5th Ave NE and NE 175th Street, phase changes were implemented to provide protected/permissive phasing for northbound/southbound movements which should address the collision problem.

- The City continues to work with Sound Transit on intersection designs for 5th Ave NE and 145th Street, though the intersection is not within City Right of Way.

- 3rd Ave NW and NW Richmond Beach Rd will be split phased in 2015 year and should prevent many future collisions.

- In 2014, City staff applied for and received a grant to address collision problems at the intersection of Meridian Ave N and N 155th St. Improvements will be implemented in 2016 - 2017.

Traffic Speed Summary

The City of Shoreline Traffic Services and Police departments have been working together to identify and target speed enforcement. Speed data is collected throughout the year and compared to the posted speed limit in order to identify streets where speeding is a problem.

Speed data collected in 2014 shows a significant reduction in high speed locations compared with 2013 data. See the Appendix for the 2013 and 2014 Traffic Speed Differential Maps which show the difference between the measured 85th percentile speed and the posted speed limit.

Traffic Volume Summary

Traffic volume data is regularly collected at eight (8) locations which include:

- Aurora Ave N south of N 175th St
- Meridian Ave N south of N 175th St
- NW Richmond Beach Rd east of 3rd Ave NW
- 5th Ave NE south of NE 175th St
- 15th Ave NE south of NE 172nd St
- 25th Ave NE south of NE 171st St
- NE 175th St west of 5th Ave NE
- NW 175th St west of 3rd Ave NW

Below is a summary of data collected at these locations. As shown in the table, daily traffic volumes are down from 2013 by 2.13%. This may be in part due to shifting modes of transportation; see Transit Summary.

	2010	2011	2012	2013	2014	5 Year Average
AM Peak Aggregate AAWDT	6878	6599	7064	7444	6935	6984
PM Peak Aggregate AAWDT	9279	9012	9314	9521	8804	9186
Daily Aggregate AAWDT	108967	105313	108025	111441	109070	108563

When compared to the five year average, AM and PM volumes are down by .70% and 4.16% respectively and average daily weekday traffic is up by .47%.

See the Appendix for the 2014 Traffic Flow Map which shows average daily weekday traffic volumes on City of Shoreline Streets.

Transit Summary

This year, signal timing improvements and Transit Signal Priority (TSP) were implemented on Aurora Avenue N. According to a report from King County Metro, TSP has reduced average intersection approach delay on the E line by 8 – 14%, or about 1 – 2 minutes per trip.

Transit ridership has increased in Shoreline, up by 7.3% since 2013. The countywide average is 2.1%.

	Average Daily Transit Boardings in Shoreline	% Increase
Spring 2014	8318	7.3%
Spring 2013	7750	-

**King County Metro data only*

Appendix

1. 2014 Traffic Flow Map
2. 2013 Traffic Speed Differential Map
3. 2014 Traffic Speed Differential Map

SHORELINE

Geographic Information System

City of Shoreline Traffic Speed Map 2014

Difference Between
85th Percentile Speeds* and
Posted Speed Limit**

Legend for Speed Ranges

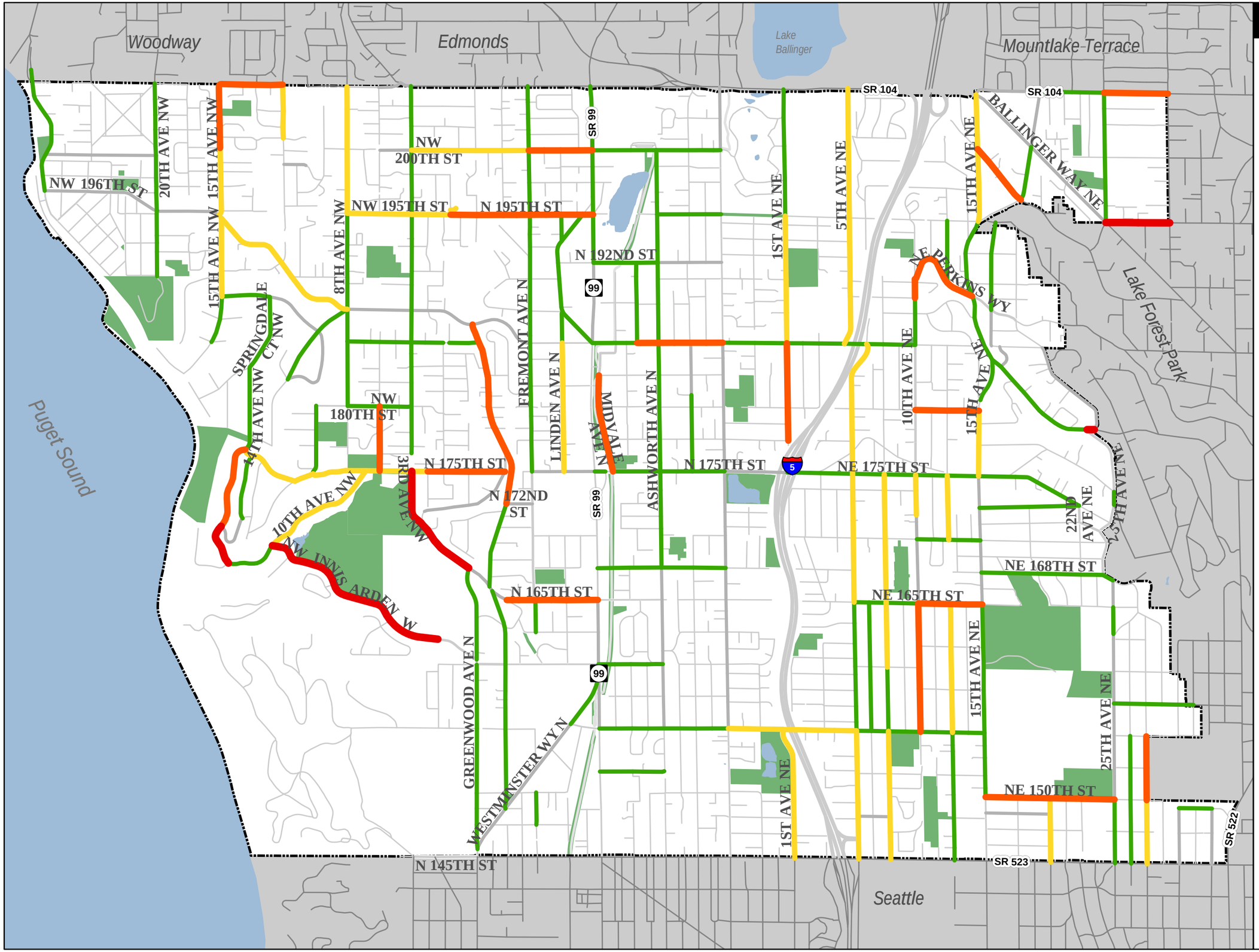
- 10 to 13 MPH Over
- 8 to 9 MPH Over
- 6 to 7 MPH Over
- 3 to 5 MPH Over
- 1 to 2 MPH Over

0 462.5 925 1,850 2,775
Feet
1 inch = 1,875 feet

City of Shoreline
Mark J. Relph, Public Works Director
Rich Meredith, City Traffic Engineer
17500 Midvale Ave N
Shoreline, WA 98133
(206) 801-2700
www.shorelinewa.gov

Map Data: Through December 2013

Woodway
Edmonds
Lake Ballinger
Mountlake Terrace
Lake Forest Park
Puget Sound
Seattle
SR 104
SR 99
I-5
NW 196TH ST
20TH AVE NW
15TH AVE NW
NW 200TH ST
N 200TH ST
NW 195TH ST
N 195TH ST
8TH AVE NW
N 192ND ST
1ST AVE NE
5TH AVE NE
15TH AVE NE
NE PERKINS WY
NW 188TH ST
14TH AVE NW
FREMONT AVE N
LINDEN AVE N
MIDVALE AVE N
ASHWORTH AVE N
10TH AVE NE
NW 180TH ST
3RD AVE NW
N 175TH ST
NE 175TH ST
N 172ND ST
22ND AVE NE
23RD AVE NE
10TH AVE NW
NW INNIS ARDEN W
AURORA AVE N
NE 168TH ST
NE 165TH ST
GREENWOOD AVE N
N 155TH ST
WESTMINSTER WY N
25TH AVE NE
NE 150TH ST
N 145TH ST
SR 523
SR 522



SHORELINE

Geographic Information System

City of Shoreline Traffic Speed Map 2013

Difference Between
85th Percentile Speeds* and
Posted Speed Limit**

Legend for Speed Ranges

- 10 to 13 MPH Over
- 8 to 9 MPH Over
- 6 to 7 MPH Over
- 3 to 5 MPH Over
- 1 to 2 MPH Over

0 462.5 925 1,850 2,775
Feet

1 inch = 1,875 feet

N
W E
S

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Map Data: Through December 2013

SHORELINE

Geographic Information System

City of Shoreline Traffic Flow Map 2014

24-Hour Average Weekday Traffic
(Combined Two-Directional Totals)

Legend

Traffic Volume

- 55,000
- 50,000
- 45,000
- 40,000
- 35,000
- 30,000
- 25,000
- 20,000
- 15,000
- 10,000
- 5,000

0 495 990 1,980 2,970 Feet

1 inch = 1,917 feet

N W E S

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Map Data: Through December 2010